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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,160	04/20/2006	Timo Muutonen	014975-123	4379
55694 7590 09/04/2007 DRINKER BIDDLE & REATH (DC) 1500 K STREET, N.W. SUITE 1100 WASHINGTON, DC 20005-1209			EXAMINER BOMAR, THOMAS S	
			ART UNIT 3672	PAPER NUMBER
			MAIL DATE 09/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/541,160

Applicant(s)

MUUTTONEN ET AL.

Examiner

Shane Bomar

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 9-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 6-8 and 12 is/are rejected.
- 7) ☒ Claim(s) 2-5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/30/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Species I in the reply filed on August 9, 2007 is acknowledged.

### ***Claim Objections***

2. Claims 1, 2, 4, 6, and 8 are objected to because of the following informalities:
  - a. in claim 1, line 12, the dash should be removed in the middle of the word "pressure";
  - b. in claim 1, lines 13-14, the recitation of "in which axial bearing the pistons are arranged to push the shank" is suggested to be reworded as --in which the pistons are arranged in the axial bearing to push the shank-- for clarity purposes;
  - c. in claims 2 and 6, the recitation of "the first pressure duct" lacks proper antecedent basis because the pressure duct in claim 1 was referred to as "at least one pressure duct", not "first";
  - d. in claim 2, line 7, the recitation of "the second pressure space" lacks proper antecedent basis;
  - e. in the last line of claim 4, the recitation of "said pressure spaces" is suggested to be reworded as --said second and third pressure spaces-- for clarity purposes;
  - f. in claim 6, lines 3-4, the recitation of "the percussion pressure duct" lacks proper antecedent basis;

g. in claim 8, line 3, the recitation of “supported to the frame” should most likely be --supported by the frame--; and

h. in the last line of claim 8, the recitation of “said first contact surface” should be -- said axial first contact surface-- to remain consistent with the previous recitation in the claim.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 6-8, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,186,246 to Muuttonen et al.

Regarding claims 1 and 12, Muuttonen et al disclose a rock drilling machine comprising at least:

a frame 6; a percussion element 1 for generating stress pulses; a shank 2 arranged at the front of the percussion element in the percussion direction, the shank comprising a percussion surface for receiving said stress pulses; and an axial bearing comprising at least:

a first piston 14b and a second piston 14a; between the pistons, an axial first contact surface and an axial second contact surface, the contact surfaces

being located in the same pressure space along the plane where the two pistons slide relative to one another (i.e., where the O-ring lies between the two pistons); at least one pressure duct 17a for leading pressure fluid from a pressure source to the axial bearing; pressure surfaces in the pistons, on which surfaces the pressure fluid is arranged to act for axial movement of the pistons; and in which the pistons are arranged in the axial bearing to push the shank along a different travel length towards the percussion direction since piston 14a is restricted to a smaller area by shoulder 15a than is piston 14b by shoulder 15b; the force of said pistons, by the action of the pressure fluid towards the percussion direction, being dimensioned such that the percussion surface is adjustable during drilling at the desired axial point for receiving the stress pulses, wherein the same pressure fluid fed to the axial bearing is arranged to act on said piston contact surfaces and pressure surfaces since the same duct 17a leads to both sets of surfaces (Fig. 5; col. 6, lines 28-40). It is noted that the contact surfaces between the two pistons share the same axis, thereby making them axial contact surfaces.

Regarding claim 6, the pressure duct 17a is inherently in contact with a percussion pressure duct of the rock drilling machine to receive pressure fluid, and the pressure duct comprises at least one element for affecting the flow of pressure fluid, such as the enlarged area behind piston 14a that leads to a smaller diameter hole and bend in the duct 17a, which will affect the flow of the fluid (Fig. 5).

Regarding claim 7, the first piston and the second piston are sleeve-like pieces arranged around the percussion element 1 (Fig. 5).

Regarding claim 8, the first piston 14b is an elongated sleeve supported by the frame in the area of its first and second ends, in the section between the first end and the second end, the first piston comprises a shoulder 14b' provided on the outer periphery of the sleeve, the shoulder having an axial first contact surface pointing in a direction opposite to the percussion direction, the second piston is around the first piston, and the second piston comprises a second contact surface 14a' pointing in the percussion direction and arranged in the same pressure space as said axial first contact surface of the shoulder 14b' (Fig. 5).

***Allowable Subject Matter***

5. Claims 2-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

6. The prior art made of record on form 892 and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 571-272-7026. The examiner can normally be reached on Monday - Thursday from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (In USA or Canada) or 571-272-1000.

/Shane Bomar/  
Patent Examiner  
Art Unit 3672

August 28, 2007